

CLAIMS

We claim:

- 5      1. A method for modifying an optical medium, the medium having a plurality of operational characteristics, each operational characteristic having a predefined limit, comprising:
  - selecting a region of the medium to be modified; and
  - modifying the medium in the region according to a predefined limit of a first of the plurality of operational characteristics; and
  - 10        modifying the medium in the region according to a predefined limit of a second of the plurality of operational characteristics;
  - such that during a read operation of data stored in the modified region, the read operation is altered in the modified region as a result of the modifications.
- 15      2. The method of claim 1 wherein modifying the medium comprises modifying the medium to have a distortion of a size that is approximately the predefined limit of the operational characteristic for distortion size.
- 20      3. The method of claim 2 wherein the distortion is formed in a reading layer of the medium through which the optical path is directed.
- 25      4. The method of claim 2 wherein the distortion comprises an air bubble formed in the reading layer, a particle deposited in the reading layer, an indentation formed in an outer surface of the reading layer, or a convex feature formed in an outer surface of the reading layer.
5. The method of claim 2 wherein the distortion is formed in a reflective layer of the medium.

6. The method of claim 1 wherein modifying the medium comprises modifying the medium  
to have a distortion of a size that is approximately the predefined limit of the operational  
characteristic for distortion size and wherein the size of the distortion is based on the first  
size of a physical deformation and a second size of a local corresponding region of  
increased birefringence.
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7. The method of claim 1 wherein modifying the medium comprises modifying the medium  
to have adjacent distortions that are spaced apart by a length that is approximately the  
predefined limit of the operational characteristic for length between adjacent distortions
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8. The method of claim 1 wherein modifying the medium comprises modifying the medium  
to have a region of increased birefringence.
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9. The method of claim 1 wherein modifying the medium comprises modifying the medium  
to have a refraction index value that is approximately at the predefined limits of the  
operational characteristic for range of acceptable refraction index values.
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10. The method of claim 1 wherein modifying the medium comprises modifying the medium  
to have a reflection value that is approximately at the predefined limit of the operational  
characteristic for reflection value.
11. The method of claim 1 wherein the selected region comprises a data region or a pre-track  
region of a medium.
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12. An optical medium having a plurality of operational characteristics, each operational  
characteristic having a predefined limit, the optical medium being modified in a modified  
region according to a predefined limit of a first of the plurality of operational  
characteristics; and the optical medium being modified in the modified region according  
to a predefined limit of a second of the plurality of operational characteristics, such that

during a read operation of data stored in the modified region, the read operation is altered in the modified region as a result of the modifications.

- 5        13. The optical medium of claim 12 wherein the medium is modified to have a distortion of a size that is approximately the predefined limit of the operational characteristic for distortion size.
- 10      14. The optical medium of claim 13 wherein the distortion is formed in a reading layer of the medium through which the optical path is directed.
- 15      15. The optical medium of claim 13 wherein the distortion comprises an air bubble formed in the reading layer, a particle deposited in the reading layer, an indentation formed in an outer surface of the reading layer, or a convex feature formed in an outer surface of the reading layer.
- 15      16. The optical medium of claim 12 wherein the distortion is formed in a reflective layer of the medium.
- 20      17. The optical medium of claim 12 wherein the distortion is of a size that is approximately the predefined limit of the operational characteristic for distortion size and wherein the size of the distortion is based on the first size of a physical deformation and a second size of a local corresponding region of increased birefringence.
- 25      18. The optical medium of claim 12 wherein the medium is modified to have adjacent distortions that are spaced apart by a length that is approximately the predefined limit of the operational characteristic for length between adjacent distortions
- 30      19. The optical medium of claim 12 wherein the medium is modified to have a region of increased birefringence.

20. The optical medium of claim 12 wherein the medium is modified to have a refraction index value that is approximately at the predefined limits of the operational characteristic for range of acceptable refraction index values.
- 5      21. The optical medium of claim 12 wherein the medium is modified to have a reflection value that is approximately at the predefined limit of the operational characteristic for reflection value.
- 10     22. The optical medium of claim 12 wherein the selected region comprises a data region or a pre-track region of a medium.

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